

CLAIMS:

1. An article comprising:

a bobbin wire;

an electrically insulating backing disposed upon the bobbin wire;

a mica paper disposed upon the electrically insulating backing and wound around the backing; and

a silicone coating disposed upon the electrically insulating backing.
2. The article of Claim 1, wherein the bobbin wire comprises copper.
3. The article of Claim 1, wherein the electrically insulating backing is fibrous.
4. The article of Claim 1, wherein the electrically insulating backing comprises glass fibers.
5. The article of Claim 1, wherein the electrically insulating backing is wound around the bobbin wire.
6. The article of Claim 1, wherein the mica paper has a thickness of about 5 to about 150 micrometers.
7. The article of Claim 1, wherein the mica paper is wound around the bobbin wire with an overlap of about 10 to about 90%, wherein the overlap is the amount of area of any one given turn that is covered by a succeeding turn.
8. The article of Claim 1, wherein the mica paper comprises an adhesive.
9. The article of Claim 1, wherein the mica paper comprises a glass backing.
10. The article of Claim 1, wherein the article further comprises a polymeric resinous film.

11. The article of Claim 10, wherein the polymeric resinous film is disposed upon the electrically insulating backing with a portion of the first surface in contact with the backing and wherein at least a portion of the surface opposed to the first surface is in contact with the mica paper.

12. The article of Claim 10, wherein the polymeric resinous film comprises a thermoplastic resin, a thermosetting resin, or a blend of a thermoplastic resin and a thermosetting resin.

13. The article of Claim 1, wherein the silicone coating is crosslinked.

14. The article of Claim 1, wherein the silicone coating is a cured coating having a thickness of about 10 to about 2,000 μm .

15. The article of Claim 1, wherein the silicone coating comprises fillers in an amount of about 1 to about 70 wt%.

16. An article comprising:

a bobbin wire;

an electrically insulating backing disposed upon the bobbin wire;

a mica paper disposed upon the electrically insulating backing and wound around the backing;

a silicone coating disposed upon the electrically insulating backing; and

a plurality of ferromagnetic particles disposed upon the silicone coating.

17. The article of Claim 16, wherein the electrically insulating backing comprises glass and is wound around the bobbin wire.

18. The article of Claim 16, wherein the ferromagnetic particles are coated with a silicone polymer.

19. The article of Claim 16, wherein the ferromagnetic particles consist essentially of iron.

20. The article of Claim 16, wherein the ferromagnetic particles have an average particle size as determined by the average mass radius of gyration of about 10 to about 1,000 micrometers prior to coating and compaction.

21. The article of Claim 16, wherein the ferromagnetic particles have an aspect ratio of greater than or equal to about 10.

22. The article of Claim 16, wherein the ferromagnetic particles comprise a coating comprising a silicate, silicon carbide, silicon nitride or a combination comprising at least one of the foregoing coatings.

23. A method of manufacturing an article comprising:

disposing an electrically insulating backing upon a bobbin wire;

disposing mica paper upon the electrically insulating backing; and

coating the mica paper with a polymeric resin.

24. The method of Claim 23, wherein the electrically insulating backing is fibrous.

25. The method of Claim 23, wherein the electrically insulating backing is wound around the bobbin wire.

26. The method of Claim 23, wherein the mica tape has a thickness of about 5 to about 150 micrometers.

27. The method of Claim 23, wherein the mica paper is wound around the bobbin wire with an overlap of about 10 to about 90%, wherein the overlap is the amount of area of any one given turn that is covered by a succeeding turn.

28. The method of Claim 23, wherein the mica paper comprises an adhesive.

29. The method of Claim 23, wherein the mica tape comprises a glass backing.

30. The method of Claim 23, further comprising disposing a polymeric resinous film upon the electrically insulating backing.

31. The method of Claim 23, wherein the polymeric resinous film is disposed upon the electrically insulating backing with a portion of the first surface in contact with the backing and wherein at least a portion of the surface opposed to the first surface is in contact with the mica paper.

32. The method of Claim 23, wherein the coating comprising the polymeric resin is crosslinked.

33. The method of Claim 23, wherein the coating comprising the polymeric resin is a cured silicone having a thickness of about 10 to about 2,000 μm .

34. The method of Claim 33, wherein the coating is accomplished by dip coating, spray painting, electrostatic painting, brush painting or spin coating.

35. An article manufactured by the method of Claim 23.

36. A method of manufacturing an article comprising:

disposing an electrically insulating backing upon a bobbin wire;

disposing mica paper upon the electrically insulating backing;

coating the mica paper with a polymeric resin to form an insulated bobbin wire;

compacting the insulated bobbin and a plurality of ferromagnetic particles in a mold at a pressure of 250 to about 1500 MPa.

37. The method of Claim 36, wherein the coating comprises a silicone polymer.

38. An article manufactured by the method of Claim 36.